

**CLAIMS:**

1. An isolated polypeptide, as recited in SEQ ID NO: 5 or SEQ ID NO: 6, comprising an immunogenic region of a *Leishmania* antigen, wherein said polypeptide contains one or more repeat region(s) of 39 amino acids.
2. An isolated DNA sequence as recited in SEQ ID NO: 3 and SEQ ID NO: 4, encoding a polypeptide as claimed in claim 1.
3. The polypeptides as claimed in claim 1, isolated from Indian strains of *Leishmania donovani*.
4. A method of detecting anti-leishmanial antibodies in a sample, said method comprising:
  - a. providing a solid support or carrier, bound with a polypeptide selected from a group consisting of SEQ ID NO: 5 and SEQ ID NO: 6 as claimed in claim 1;
  - b. binding the anti-leishmanial antibodies from the said sample to the polypeptide bound to the solid support or a carrier;
  - c. adding to the content of step (b) an anti-human secondary antibody or a protein, conjugated to an enzyme or a label; and
  - d. detecting the anti-leishmanial antibodies in the said sample.
5. A method as claimed in claim 4, wherein the sample is selected from a group consisting of whole blood, serum, plasma and other body fluid.
6. A method as claimed in claim 5, wherein the sample is selected from an animal or a mammal including human beings.
7. A method as claimed in claim 4, wherein said solid support is selected from a group consisting of nitrocellulose, nylon, latex particles, polypropylene and polystyrene material.
8. A method as claimed in claim 4, wherein said carrier is gold particle.
9. A method as claimed in claim 4, wherein the anti-human secondary antibody is selected from an antibody classes of IgG, IgM, IgA, IgE and their subclasses.
10. A method as claimed in claim 4, wherein the protein is selected from a group consisting of Protein A and Protein G
11. A method as claimed in claim 4, wherein the enzyme is selected from the group consisting of Alkaline Phosphatase, Horseradish Peroxidase,  $\beta$ -galactosidase, Urease, Xanthine Oxidase, Glucose Oxidase and penicillinase.

12. A method as claimed in claim 4, wherein said label is selected from a group consisting of radioisotope, biotin, chromophore, fluorophore and chemiluminiscent moiety.
13. A method as claimed in claim 4, wherein said detecting step of anti-leishmanial antibodies is selected from the group consisting of detecting fluorescence, detecting chemiluminescence, detecting light absorbance or detecting radio isotopes.
14. A diagnostic kit for detecting anti-leishmanial antibodies comprising a polypeptide as claimed in claim 1, an anti-human secondary antibody or a protein, wherein said anti-human secondary antibody or the protein is conjugated to an enzyme or a label, and conventional reagents for detecting said antibodies.
15. The kit as claimed in claim 14, wherein the said polypeptide is bound to a solid support or carrier.
16. The kit as claimed in claim 14, wherein the solid support is selected from the group consisting of nitrocellulose, nylon, latex particles, polypropylene and polystyrene material.
17. The kit as claimed in claim 14, wherein the carrier is gold particle.
18. The kit as claimed in claim 14, wherein the anti-human secondary antibody is selected from an antibody classes of IgG, IgM, IgA, IgE and their subclasses.
19. The kit as claimed in claim 14, wherein the protein is selected from a group consisting of Protein A and Protein G.
20. The kit as claimed in claim 14, wherein said label is selected from a group consisting of enzyme, radio isotope, biotin, chromophore, fluorophore and chemiluminiscent moiety.
21. The kit as claimed in claim 14, wherein the enzyme is selected from the group consisting of Alkaline Phosphatase, Horseradish Peroxidase,  $\beta$ -galactosidase, Urease, Xanthine Oxidase, Glucose Oxidase and penicillinase.
22. A method of obtaining antibodies to the polypeptide of claim 1, the said method comprising injecting polypeptide to animals, harvesting the antibodies produced against the polypeptide and purifying the said antibodies.
23. A method as claimed in claim 22, wherein the animal is selected from a group consisting of mice, rabbit, horse, goat, sheep, guinea pig, pig, bovine, rat, chicken and hamsters.

24. A method of detecting Leishmanial antigens in a sample using the antibodies obtained as per claim 22, said method comprising:
- a) binding a portion of the antibody to a solid support or carrier;
  - b) adding the sample containing Leishmanial antigens to the antibody bound to the solid support or carrier;
  - c) adding to the contents of step (b) another portion of antibody which is conjugated to an enzyme or a label; and
  - d) detecting the Leishmanial antigens in the said sample.
25. A method as claimed in claim 24, wherein the sample is selected from the group consisting of whole blood, bone marrow, splenic aspirate, skin biopsy, other tissue biopsy and section smears.
26. A method as claimed in claim 25, wherein the sample is selected from an animal or a mammal including human beings.
27. A method as claimed in claim 24, wherein said solid support is selected from the group consisting of nitrocellulose, nylon, latex particles, polypropylene, glass and polystyrene material.
28. A method as claimed in claim 24, wherein said carrier is gold particle.
29. A method as claimed in claim 24, wherein the enzyme is selected from the group consisting of Alkaline Phosphatase, Horseradish Peroxidase,  $\beta$ -galactosidase, Urease, Xanthine Oxidase, Glucose Oxidase and penicillinase.
30. A method as claimed in claim 24, wherein said label is selected from a group consisting of radioisotope, biotin, chromophore, fluorophore and chemiluminiscent moiety.
31. A method as claimed in claim 24, wherein said detecting step of Leishmanial antigens is selected from the group consisting of detecting fluorescence, detecting chemiluminescence, detecting light absorbance or detecting radio isotopes.
32. A diagnostic kit for detecting Leishmanial antigens comprising antibody bound to a solid support or carrier, antibody conjugated to an enzyme or a label and conventional reagents for detecting Leishmanial antigens.
33. The diagnostic kit as claimed in claim 32, wherein said solid support is selected from the group consisting of nitrocellulose, nylon, latex particles, polypropylene, glass and polystyrene material.
34. The diagnostic kit as claimed in claim 32, wherein said carrier is gold particle.

35. The diagnostic kit as claimed in claim 32, wherein the enzyme is selected from the group consisting of Alkaline Phosphatase, Horseradish Peroxidase,  $\beta$ -galactosidase, Urease, Xanthine Oxidase, Glucose Oxidase and penicillinase.
36. The diagnostic kit as claimed in claim 32, wherein said label is selected from a group consisting of radioisotope, biotin, chromophore, fluorophore and chemiluminiscent moiety.